MSN EDITORIAL INDEX FOR 1978

Listed are articles that appeared in the twelve issues (January through December) constituting Volume 8 of Microwave Systems News.

Abbreviations: CF-Cover Feature, MR-Microwave Review, PF--Product Feature, TA-Technical Article, TF-Technology Forecast, WW-Washington Window.

ANTENNAS

- · Oceans Monitored by Seasat, Jan., 17. (MR)
- Antennas: Towards Greater Controlled Performance, Jan., p. 48.
- Searching for Life in the Microwave "Water Hole," March, p. 19. (MR)
- 34-dB Gain Dish Extends TV's Live Coverage, March, p. 43. (MR)

 • Antenna Spans 2–40 GHz, March,
- 115. (PF)
- Elint Array Scans 120 Degrees Over
- 3 Bands, May, p. 19. (MR)

 MBA vs. Phased Array: What's Best for Satellite Application? May, p. 32.
- Digital Processing Enhances Antenna Measurements, May, p. 40.
- (TA)
 Designing Offset Reflector Antennas at 30 GHz, May, p. 56. (TA)
 Antennas: Key to Communications Satellite Growth, June, p. 83.(TA)
 Air Force Tests Portable Pattern Analyzer, July, p. 19. (MR)
 Multibeam Array Controls RPVs, Oct., p. 113. (TA)
- Intelsat Backs Antenna Farms. See
- Gov./Ind. (Sept.). · Radar Requirements on the Upswing. See Radar (March).

AVIONICS

- Second Sourcing of Cruise Missile Guidance Under Way, Jan., p. 34. (WW)
- B-52 Avionics to Be Completely
- Updated, Feb., p. 23. (WW) Landing Systems Clash in Montreal, March, p. 49. (WW)

 U.S. Avionics Lead Seen Growing,
- May, p. 25. (WW)

 MLS Selection a Pyrrhic Victory?
- June, p. 23. (MR)
- Brown Cites Soviet Avionics/ECM Upgrade. See Countermeasures (May).
- Early Navstar Tests Successful— Receiver Development Continues.
- See Communications (Aug.).

 FAA Foresees Some JTIDS Interference. See Communications (Jan.).
- IFF Funding to Increase. See Communications (Jan.).
- JTIDS Under Study. See Communications (Aug.).
- NATO Electronics Slipping? See Gov./Ind. (Aug.).

COMMUNICATIONS

- FAA Foresees Some JTIDS Interference, Jan., p. 29. (WW)

 • IFF Funding to Increase, Jan., p. 29.
- (WW)

- Radio: Spectrum Density Through Digital Modulation, Jan., p. 44. (TF)
- Analog Radio: Progress in a Mature Field, Jan., p. 44. (TF)
 Bell Scientists Propose New Sat-
- com System, March, p. 38. (MR)

 Telesat Canada Proceeds with
- Anik-C, March, p. 43. (MR)

 Japan Bids for Leadership in Space Communications, March, p. 57. (TA)
- TDMA: The Answer for European
- Satcom, March, p. 77. (TA)

 Phase II Under Way for Satellite
 Computer Links, April, p. 27. (MR)
- NBS to Produce Calibration System for Earth Terminals, May, p. 12.
- Air Force Continues DSCS Effort, May, p. 25. (WW)
- Remedies Sought to Defeat Soviet Eavesdropping on Microwave Links, June, p. 17. (MR)
- Extraterrestrial Eavesdropping Seen Possible via Radar Leakage,
- June, p. 22. (MR)

 Early Navstar Tests Successful—
 Receiver Development Continues,
- Aug., p. 19. (MR)

 Japan's Millimeter Efforts Describ-
- ed, Aug., p. 23. (MR)
 JTIDS Under Study, Aug., p. 33.
- Wrist-Radio Satcom Studied, Oct., 17. (MR)
- Bandwidth Conservation Is Essential, Oct., p. 67. (TA)



- Front End Designed for Shuttle/ Com Radar Receiver, Oct., p. 81.
- Europeans Preparing for Direct TV Broadcasting via Satellite, Oct., p. 89.
- Frequency Division Solves Systems
- Problems, Oct., p. 97. (TA)

 Bell Readies Plans for Zohreh Satellites, Nov., p. 20. (MR)

 Ford Wins Insat, Starts Redesign-
- ing, Nov., p. 24. (MR)

- NEC Proceeding with SBS Contract, Nov., p. 26. (MR)
 Sony Building Satcom Receivers With GaAs ICs, Nov., p. 56. (TA)
 Direct TV by Satellite Moves Nearer, Dec., p. 22. (MR)
 Amp Provides 250 W for 14-GHz
- Satcom. See Components (Oct.).
- Antennas: Key to Communications Satellite Growth. See Antennas
- Beam Waveguide Improves G/T.
- See Components (Oct.).

 Communication TWTs Offer High Efficiency, Low AM/PM Conversion. See Components (May).
- Designing Offset Reflector Antennas at 30 GHz. See Antennas (May). Drastic Changes Proposed. See
- Gov./Ind. (Aug.).

 Intelsat Backs Antenna Farms. See Gov./Ind. (Sept.).
- Reliability Stressed
 Tubes. See Tubes (Aug.). Stressed for Space
- Rockwell Subcontracting Earth Station Award. See Gov./Ind. (April).
- Searching for Life in the Microwave
 "Water Hole." See Antennas "Water (March).
- Soviet Satellite Radiates China. See Satellites (Jan.)
- 34-dB Gain Dish Extends TV's Live Coverage. See Antennas (March).
- TWTs Sought for Intersatellite Communication. See Tubes (March).

COMPONENTS, DEVICES, & AMPS

- VTOs: Supercomponents That De-
- mand Ingenuity, Jan., p. 48. (TF)

 Phase-Locked Sources: Direct Syn-
- thesis Is Next, Jan., p. 54. (TF)

 IMPATT Diodes: Generating Millimeter-Wave Power, Jan., p. 64. (TF)

 Gunn Diodes: From \$40 to \$4 in
- Five Years, Jan., p. 64. (TF)

 Diode Amplifiers: Controlling Nega-
- tive Resistance, Jan., p. 67. (TF)

 PIN Diodes: Toward Standardization, Jan., p. 68. (TF)
- Packaging: Active Elements to Increase, Jan., p. 72. (TF)
- Josephson Junctions: Hot Future for Supercooling, Jan., p. 74. (TF) Semiconductors: Reaching
- Higher Performance, Feb., p. 32. (TF)
- Microwave Semiconductors: What's Ahead? Feb., p. 35. (TF)
- · G/bit Logic: Better Packaging for Faster Speeds, Feb., p. 36. (TF)

 • Digital Microwaves: Lower Powers
- and Higher Data Rates, Feb., p. 36.
- InP Devices: Promising but Challenging, Feb., p. 42. (TF)
 • K-Band Maser Improves Receiver
- Sensitivity, March, p. 39. (MR)

MSN EDITORIAL INDEX FOR 1978

- · Ferrites: Improved Materials Boost Power and Frequency, March, p. 93. (TF)
- Mixers: Matching with Filters, March, p. 93. (TF)
 Combating Phase-Lock
- Loop "Transportation Lag," March, p. 101.
- Threshold Detector Responds Digitally, *March*, p. 115. (PF)

 • Applications of Microwave Solid
- State Power Sources—An Overview, April, p. 45. (TA)
- Gunn Oscillators—A Decade Later, April, p. 56. (TA)
- SAW Chirp Filters Keeping Analog Signal Processing Alive, April, p. 64A (Euroform). (TA)
- IMPATTs Fortifying Niche Between FETs and Tubes, April, p. 65. (TA)

 • IMPATT Sources: Striving for High-
- er Power and Efficiency, April, p. 76.
- Filters: Passing More Information With Less Distortion, April, p. 83.
- Filters: A New Wave in Epitaxial YIG, April, p. 85. (TF)
- SAW Components: Getting Below the Surface, April, p. 85. (TF)
 • Filters: Reduced Cost Through In-
- tegratability, April, p. 87. (TF)

 Filters: Printed Circuits for Multi-

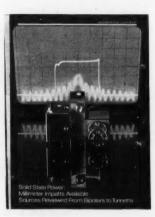
- plexes, April, p. 90. (TF)
- Suppressing Parametric Oscilla-tions in IMPATT Amplifiers, April, p. 92. (TA)
- 94-GHz Gunn Source Delivers Up to 20 mW CW, April, p. 98. (CF)

 Ruggedized C-Band Amplifiers Use
- New FET Chip, April, p. 98. (PF)

 1-W FET Oscillator Takes IMPATTs at 8 GHz, April, p. 100.
- Coaxial Attenuators Handle 50 W Over Multi-Octave Bands, Niay, p. 74.
- SiO. Provides Greater Versatility for
- Coax Cables, May, p. 80. (TA)

 Inexpensive Transistors Protect Receiver Front Ends, May, p. 84.
- Communication TWTs Offer High Efficiency, Low AM/PM Conversion, May, p. 97. (PF)
- Researchers Probe Cold World of Cryogenics, June, p. 101. (TA)
- Inexpensive Mixers Yield 3rd-Order Intercept 55 dB Below IF, June, p.
- Magnetostatics Dominate Acoustics Session, July, p. 25. (MR)
- Cold Cavities Key to Pulsed Power,
- July, p. 25. (MR)

 What Does Receiver Sensitivity
 Mean? July, p. 54. (TA)



- SAW Components Evolving Into Signal Sophisticated Processing Modules, Aug., p. 39. (TA)
- Mixers Optimized for Satellite Use,
- Aug., p. 71. (PF)

 Soviets Develop "Hot" Superconductor, Sept., p. 33. (MR)

 Plasma Switch Protects 95-GHz
- Radar, Sept., p. 71. (TA)

 Small Filters Shrink ECM Systems,
- Sept., p. 97. (PF)
- Beam Waveguide Improves G/T, Oct., p. 18. (MR)
- TDRSS Amps Redesigned, Oct., p. 39. (WW)
- · Cryogenic Power Supply Developed, Oct., p. 42. (WW) GPS to Carry Secondary Payloads,
- Oct., p. 47. (MR)

 Tunable Laser Produces Intense
- Beams, Oct., p. 47. (MR) Amp Provides 250 W for 14-GHz
- Satcom, Oct., p. 138. (PF)
- Japan Developing Solid State Power for Ovens, Nov., p. 21. (MR)

 Simplifying Superconductivity,
- Nov., p. 26. (MR)
- · Solid State Power Improves, Nov., p. 39. (TA)
- System Needs Stimulate mm-Wave
- Research, Nov., p. 40. (TA) Structures Improved for CW Im-
- patts, Nov., p. 41. (TA)
 Frequencies May Exceed 500 GHz, Nov., p. 49. (TA)
- Bipolars Dominate at Low RF, Nov., p. 50. (TA)
- Antennas & Components Described at Paris Conference, Dec., 30. (MR)
- Component Advances Improve
- Doppler Radar. See Radar (Nov.).

 Early Navstar Tests Successful—
 Receiver Development Continues. See Communications (Aug.).
- FETs Considered as Control Devices. See FETs (Nov.).
 • Frequency Division Solves Systems
- Problems. See Communications (Oct.). Hughes Researchers Investigate IMPATT Operation at 220 GHz. See
- Gov./Ind. (April). Mini-Jammer Suited for Drone. See

NEW 1-18 GHZ VICROWAVE YNTHESIZ

Three plug-in's provide coverage from 0.002 to 18 GHz. . .a single plug-in covers 2 to 18 GHz. . .all in a single chassis
Pulse modulation from 2 to 18 GHz with +40 dB dynamic range Harmonic related spurious down 60 dBc.

Many standard features including 10 kHz resolution, ±0.65 dB leveling, sweep attenuator; and AM, FM, linear and pulse operation.

Local or remote programming with BCD computer interface. □ And best of all the price is 20% less than the second best synthesizer.



□ Write for details on the Model 700 from Omnivia.



Circle Reader Service No. 3

Countermeasures (July).

 New Bipolar Company Enters Market. See Gov./Ind. (Oct.)

 Researchers Wringing Power From GaAs FETs. See FETs (Nov.). SAW Filters Simplify Signal Sorting.

See Countermeasures (Sept.). Sony Building Satcom Receivers With GaAs ICs. See Communications (Nov.).

 Wideband Transistor Amplifier Development Pushed for ECM. See Countermeasures (June).

COUNTERMEASURES



· Are Some More Equal Than Oth-

ers?, April, p. 39. (WW)

NATO Pushing for EW Standardiza-

tion, April, p. 39. (WW)

U.S. Air Force Still Seeks More E4s, April, p. 42. (WW)

Soviet Ground-Based Air Defenses

Pondered, April, p. 42. (WW)

Brown Cites Soviet Avionics/ECM

Upgrade, *May, p. 28.* (WW)

■ Wideband Transistor Amplifier Development Pushed for ECM, June, p. 23. (MR)

 Experimental Rad Cone and Deceptive ECM Proposed, July, p. 27. (WW)

• The Navy's New Jamming System: Big Business, July, p. 41. (TA)

Microwaves Play Key Role in ASPJ,

July, p. 44. (TA)

• ESM Improves Fast Patrol Boat Capabilities, July, p. 64. (TA)

• Mini-Jammer Suited for Drone,

July, p. 71. (CF)

 Com Jammer in Competition, Sept., 42. (WW) SAW Filters Simplify Signal Sorting,

Sept., p. 75. (TA) Support Given to ALQ-161, Oct., p.

42. (WW) ALQ-161: Time-Sharing Jammer Power, Oct., p. 55. (TA)

Multibeam Array Controls RPVs. See Antennas (Oct.).

 Perry Urges EW Cooperation. See Gov./Ind. (Oct.).

• Small Fibers Shrink ECM Systems. See Components (Sept.).



Multi-contact, rack-and-panel connectors, new from AMP.

Compact, lightweight, they operate at 15 KVDC up to 70,000 ft. altitude, in a temperature range from -55°C to 125°C. And they withstand Hi-Pot testing to 20 KVDC.

Designed for a wide range of military and rugged industrial applications, the connectors are available with 2, 4, 6, 8, 10 and 12-contact housing configurationsfor panel or bulkhead mounting.

Electrical, mechanical and environmental integrity are incorporated into the connectors. Features include glassfilled epoxy housings and gold-plated contacts, rated at 7.5 amperes, that accommodate wire sizes to 20 AWG. Plus, resilient seals inside each pin shroud provide positive sealing for the mated connector. Available as connectors alone, or pre-assembled with leads of any length and color.

For more information, call (717) 367-1105. Or write AMP Capitron Division, Elizabethtown, PA 17022. TWX: 510-657-4561.

AMP has a better way.

AMP Capitron Division

Circle Reader Service No. 4

DESIGN

- HP-25 Simplifies Microstrip Calcu-
- lations, June, p. 116. (TA)

 Nomograms Simplify Analysis of Wave Reflection Coefficients, Sept., p. 89. (TA)
- Calculator Program Enhances Branch-Line Coupler Design, Oct., p. 137. (TA)
- Nomograph Aids Solar Power Sat-
- ellite Design, Dec., p. 65. (TA)

 Computer Synthesis Improves Radar Feeds. See Radar (May).
- Designing Offset Reflector Antennas at 30 GHz. See Antennas (May).
- Front End Designed for Shuttle/ Com Radar Receiver. See Communications (Oct.).

- · FETs: Reaching for Higher Power
- and Frequency, Feb., p. 13. (MR)
 FET Stage-Delay of 80 ps Achieved, Feb., p. 18. (MR)
 • FET Amplifiers: The Viable Alterna-
- tive, Feb., p. 29. (TF)

• FETs: improving Performance and

- Reliability, Feb., p. 38. (TF)
 FETs: Cost and Integration Will Be the Next Goal, Feb., p. 40. (TF)
 • FET Technology: An Overview,
- Feb., p. 47. (TA)
 FET Amplifier Spans 4-12 GHz,
- Feb., p. 49. (TA)

 Designing MESFET Amps for More
- Power, Feb., p. 61. (TA)

 The Versatile FET Expands its Hori-
- zons, Feb., p. 71. (TA)

 Power FET Delivers 2½ W at 8 GHz,
- 7 dB Gain, Feb., p. 79. (PF)
 GaAs FETs Opening Gates on Power Reservoir, April, p. 49. (TA) Power GaAs FETs Generate 1 W at
- Power Gaas FeTs Generate TW at 12 GHz, July, p. 75. (PF)
 Measuring Thermal Resistance in GaAs Power FETs, Oct., p. 105. (TA)
 Low-Noise FET Specified to 18 GHz, Oct., p. 140. (PF)
- Researchers Wringing Power From
- GaAs FETs, Nov., p. 44. (TA)
 FETs Considered as Control De-
- vices, Nov., p. 81. (TA)

 Survey Reveals Improved GaAs FET Noise and Power. See Gov./Ind. (April).

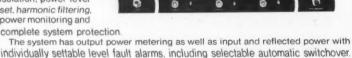
Metrics (and pictures, too)

Dually redundant Traveling Wave Tube Amplifier System for small earth station transmitters.

Model A300/C-297 was designed specifically for commercial satellite communication systems in the 5.925 to 6.425 GHz range.

Standard equipment in this completely selfcontained 75 watt system includes two TWT's, all the power supplies, input/output isolation, power level set, harmonic filtering. power monitoring and

complete system protection.



time delay. System is also protected from damage due to high reflected output power. LogiMetrics has many proven designs from 600 watts Dually Redundant systems to as low as 1 watt amplifiers. We've built them for ComSat, RCA Global Communications and the NASA Space Shuttle. We've also provided many multi-octave E.M.I. test systems for major aerospace companies and government facilities

The TWT's are protected thru automatic sequencing of TWT voltages and warm-up

We have the knowledge, the experience and the capabilities to build a TWT system especially for you. So call (516) 681-4700 for details. Or write

LogiMetrics

121-03 Dupont Street, Plainview, New York, 11803 (516) 681-4700/TWX: 510-221-1833

Circle Reader Service No. 5

GOVERNMENT/INDUSTRY NEWS AND DEVELOPMENTS

- Cornell Granted Submicron Lab, Jan., p. 22. (MR)
 Low Strength Signals, Feb., p. 26.
- WÉMA Protests Government's Repair of Microwave Tubes, March, p. 52. (WW)
- Hughes Researchers Investigate IMPATT Operation at 220 GHz. April. p. 28. (MR)
- Rockwell Subcontracting Earth Station Award, April, p. 28. (MR)
- Survey Reveals Improved GaAs FET Noise and Power, April, p. 28. (MR)
- Emerson and Avantek Scrap Merg-
- er Agreement, April, p. 30. (MR)

 Will Iceland Sell Heat via Microwaves? May, p. 17. (MR)
- Keeping an Eye on the Sparrow, May, p. 28. (WW)
- Lease vs Buy, June, p. 30. (WW)
 Technology Export List Revised, June, p. 30. (WW)
- · A Look Ahead to What's on the MTT Ottawa Agenda, June, p. 53.
- Carter Clampdown, July, p. 30. (WW)
- Technology Transfer Examined, July, p. 30. (WW)
 New Fuze for Shells, Aug., p. 25.
- Preview of the European Micro-
- wave Conference, Aug., p. 27. (MR)

 Drastic Changes Proposed, Aug., p. 33. (WW) NATO Electronics Slipping? Aug.,
- p. 36. (WW) Congress: Some In, Some Out, Aug., p. 36. (WW)

 Microwaves 'Safe.' Millimeter Waves Tested on Bacteria, Sept., p. 28. (MR)

Intelsat Backs Antenna Farms,

Sept., p. 39. (WW)
Stabilization Royalties in a Spin, Sept., p. 42. (WW)

• Newslines, Sept., p. 42. (WW) · Paris' EuMC: Good, but Too Much? Sept., p. 96A (Euroform).

• London Launches Military Micro-

waves Conference, Oct., p. E3 (Euro-

 Nippon and Hughes Land SBS, Oct., p. 23. (MR)

 New Bipolar Company Enters Market, Oct., p. 24. (MR)
• Perry Urges EW Cooperation, Oct.,

p. 39. (WW)

Newslines, Oct., p. 42. (WW)
Scientists Disagree on Bioeffects of

mm-Waves, Nov., p. 22. (MR)

• Small Cracks Detected in Metallic Surfaces, Nov., p. 25. (MR)

Tube Pioneer Retires, Nov., p. 27.

Japanese Firms Discuss Achievements and Plans, Nov., p. 53. (TA)

Future of Microwaves Is Monolithic, Nov., p. 60. (TA)

 Experimental Microscope Sees Inside Transistors, Dec., p. 17. (MR)

 Arecibo Tests Atmospheric Effects of Solar Power Satellite. See Satellites (March).

• Bell Readies Plans for Zohreh

Satellites. See Communications (Nov.).

· Com Jammer in Competition. See

Countermeasures (Sept.).

Cryogenic Power Supply oped. See Components (Oct.). Ford Wins Insat, Starts Redesigning. See Communications (Nov.).

The Navy's New Jamming System:
 Big Business. See Countermeasures

(July).

NEC Proceeding With SBS Contract. See Communications (Nov.).

 New Component House Founded, Dec., p. 24. (MR)

· Once Again: Where Did the Microwave Engineers Go? See Manage-

ment (July).

Researchers Probe Cold World of Cryogenics. See Components (June)

 Satellite X-Ray Test Facility Planned. See Satellites (May).

 Searching for Life in the Microwave
 "Water Hole." See Antennas Antennas (March).

 TDRSS Amps Redesigned. See Components (Oct.).

 Telesat Canada Proceeds with Anik-C Communications See (March).

HISTORY

 Special Report: Milestones in Microwave Technology, June, 34-49.

 Unproven Sibling Grows to Be a Giant, p. 36.

• The First Microwave Tubes, p. 37.

Klystron: Genie of Microwave Technology, p. 39.

Klystron Provides Impetus for the

TWT's Creation, p. 41. How Radar Fueled the

Power-Frequency Race, p. 42. • 1800s Microwave Links Today's Communica-Stage for

tions, p. 45. Microwave Memorabilia Quiz, p. 45.

 The Birth of Radio Astronomy, p. 46.

INSTRUMENTATION

 Instrumentation: Six Ports Simplify Network Analysis, Jan., p. 54. (TF) Instrumentation: Analog vs. Digital

vs. Software, Jan., p. 56. (TF)
• Instrumentation: Cheaper and Better with Microprocessors, Jan., p. 58.

Instrumentation: A Revolution in Device Testing, Jan., p. 60. (TF)
• Synthesized Generator's SSB Ex-

Cavity-Coupled Standard, ceeds Nov., p. 72. (PF)

• A Fast RF Method Measures Spu-

rious Signals, Nov., p. 72. (PF)

 Many Choices Face Designer, Dec., p. 40. (TA)

• Operational Systems Described, Dec., pp. 41, 44, 48. (TA)

 Home-Built Mini-Systems Become Commonplace, Dec., p. 51. (TA)

Hindsight of a Microprocessor

User, Dec., p. 60. (TA) Make Swept Measurements to 110

GHz, Dec., p. 77. (PF)

• Digital Processing Enhances Antenna Measurements. See Antennas



☐ Excellent passband characteristics ☐ Quality mechanical design □ Meets demanding Mil specs □ Competitive price and delignment

Coleman Microwave's history of success satisfaction with our high quality stand specifications and s. hese are just a few of the ry sch s first in quality filters and why customers and again for new filter requirements. READER SERVICE CARD OR PHONE FOR COMPLETE DATA.

BANDPASS

□ BAND REJECT

HIGHPASS

LOWPASS

specify Coleman!

COLEMAN MICROWAVE CO.

P. O. BOX 247 EDINBURG, VIRGINIA 22824 (703) 984-8848

MANAGEMENT

- Cruise Missile Program Office Bolstered, Jan., p. 34. (WW)
 RFP for Navy's Latest Shipboard
- Radar Due, Jan., p. 34. (WW)
- MICs and Subsystems: Integration Saves Money, Jan., p. 70. (TF)

 Packaging: Active Elements to In-
- crease, Jan., p. 72. (TF)

 DoD Anxious for Acceptance of U.S. Proposed MLS, Feb., p. 23.
- (WW)
- Emerson Electric Acquires Avantek, March, p. 42. (MR)

 Once Again: Where Did the Micro-
- wave Engineers Go? July, p. 17. (MR)
- How to Build a Winner Around Technology, Oct., p. 132. (TA)
- Emerson and Avantek Scrap Merger Agreement. (April). See Govt./Ind.

RADAR

- Radar Probes Space, Jan., p. 22. (MR)
- Pave Paws Radiation Meets Health Standards, Jan., p. 29. (WW)

 RFP for Navy's Latest Shipboard Radar Due, Jan., p. 34. (WW)
- Radar: Bistatic Arrays in Space?
- Jan., p. 39. (TF)
 Radar: Challenges of Maturity,
- Jan., p. 40. (TF)

 S-Band with TRAPATTs, Jan., p.
- · Radar Requirements on the Upswing, March, p. 33. (MR)
- Synthetic Aperture Radar Analyzes Hurricane Waves, March, p. 36. (MR)
- · Car Radars Could Be Standard in the 1980s, April, p. 23. (MR)
- Army Pushes Radar Effort, May, p. 28. (WW)



- Computer Synthesis Improves Ra-
- dar Feeds, May, p. 66. (TA)

 Pave Paws Test Scrutinized, June, 25. (WW)
- Army to Test STARTLE Radar While Navy Readies Gyrotron, July, p. 23. (MR)
- · Ladars Use on-Axis Pointing, July,
- p. 25. (MR)

 Alaskan Radar to Be Updated, July, p. 30. (WW) • Strike System May Add Radar,
- Sept., p. 25. (MR)

 Radar Computer Sorts Waveforms
- for ICBM Defense, Sept., p. 26. (MR) Radar Experiment Planned for Ve-
- nus Probe, Sept., p. 32. (MR) Will Tactical Aircraft Use Bistatic Radar? Sept., p. 49. (TA)
 Synthetic Apertures Studied for
- Satellite Radar, Sept., p. 56. (TA) European Developments in Ground
- Radar, Oct., p. E6 (Euroform). (TA)
 Megawatt Radar Set to Probe lonosphere, Nov., p. 19. (MR)
 Component Advances Improve Doppler Radar, Nov., p. 61. (TA)



- Extraterrestrial Eavesdropping Seen Possible via Radar Leakage. See Communications (June).
- Front End Designed for Shuttle/ Com Radar Receiver. See Communi-
- cations (Oct.).

 Large Radar Satellite Proposed. See Satellites (Sept.).
- Plasma Switch Protects 95-GHz Radar. See Components (Sept.).

SATELLITES

- Marots Contracts Headed State-
- side, Jan., p. 24. (MR)

 Soviet Satellite Radiates China,
- Jan., p. 24. (MR)

 Problems Corrected on Ocean Sur-
- veillance Satellite, Feb., p. 26. (WW)

 Customized Earth Station Market Is Booming, March, p. 38. (MR)
- Arecibo Tests Atmospheric Effects of Solar Power Satellites, March, of Solar Fowe.
 p. 38. (MR)
 NASA, Energy Dept. Nudging Solar
 Power Satellite, May, p. 18. (MR)
 (Continued on page 80)

CALIBRATED ATTENUATOR SETS 2551 DC to 18.0 Frequency Range(GHz): DC to 12.4 DC to 18.0 DC to 12.4 DC to 18.0 e N APC-7 SMA One Each 3dB, 6dB, 10dB and 20dB Type N SMA Connectors: Type N Attenuation Values: (Sets with values other than 3,6,10 & 20 dB are also available) Maximum Deviation from Nominal Value: 3 & 6dB ±0.3 ±0.3 +0.3 ±0.3 ±0.5 ±0.3 ±0.5 10dB ±0.3 ±0.5 ±0.5 ±0.5 20dB ±0.5 1.07 + 0.015f(GHz) Maximum VSWR: 2 watts average; 500 watts peak Maximum Input Power: Calibration at DC to 12.4 GHz and DC to 18.0 GHz Type 'N', SMA, 7MM Connectors Calibration at DC, 4.0, 8.0, 12.4 and 18.0 GHz • All measurements traceable to DC, 4.0, 8.0, 12.4: Yes Yes Yes CALL OUR NATIONWIDE TOLL FREE NUMBER: 1-800-521-4410 The National Bureau of Standards U.S.A.: 3800 Packard Road, Ann Arbor, Michigan 48104 (313)971-1992* TWX 810-223-6031* FRANCE: S.C.I.E.-D.I.M.E.S. 928-38-65 JAPAN: Toko Trading, Inc. 03-409-5831 ISRAEL: Racom Electronics 443126-7-8 IDWFST

(Continued from page 76)

◆ Satellite X-Ray Test Facility Planned, May, p. 25. (WW)

◆ DSCS III Launch Plans Pushed,

June, p. 25. (WW)

NSA to Replace Burned Satcom Link, July, p. 27. (WW)

Sirio Repeater Designed for SHF

Experiments, Aug., p. 57. (TA)

Large Radar Satellite Proposed, Sept., p. 17. (MR)

• Jam-Resistant GPS Model and

Manpack Tested, Dec., p. 20. (MR)

• Air Force Continues DSCS Effort.

See Communications (May). Antennas: Key to Communications

Satellite Growth. See Antennas (June).

Bell Readies Plans for Zohreh

Communications Satellites. See

 Bell Scientists Propose New Satcom System. See Communications (March).

Direct TV by Satellite Moves Nearer. See Communications (Dec.).

Early Navstar Tests Successful—
Receiver Development Continues.

See Communications (Aug.).

• Europeans Preparing for Direct TV

Broadcasting via Satellite. See Communications (Oct.).

 Ford Wins Insat, Starts Redesigning. See Communications (Nov.).

GPS to Carry Secondary Payloads

See Components (Oct.).

Innovative Design Improves Earth Station TWT. See Tubes (March).

 Intelsat Backs Antenna Farms. See Gov./Ind. (Sept.)

 Japan Bids for Leadership in Space Communications. See Communications (March).

Lease vs. Buy. See Gov./Ind.

 MBA vs. Phased Array: What's Best for Satellite Application?. See Antennas (May).

 Mixers Optimized for Satellite Use. See Components (Aug.).

 NBS to Produce Calibration System for Earth Terminals. See Communications (May).

• NEC Proceeding With SBS Contract. See Communications (March).

 Nippon and Hughes Land SBS. See Gov./Ind. (Oct.).

· Oceans Monitored by Seasat. See Antennas (Oct.).

 Phase II Under Way for Satellite Computer Links. See Communications (April).

Stabilization Royalties in a Spin. See Gov./Ind. (Sept.).

 TDMA: The Answer for European Satcom? See Communications

TDRSS Amps Redesigned. See Components (Oct.).

 Telesat Canada Proceeds with Anik-C. See Communications (March).

TWTs Sought for Intersatellite See Communications. (March).

 Will Iceland Sell Heat Via Microwaves? See Gov./Ind. (May). Wrist-Radio Satcom Studied. See

Communications (Oct.).

TUBES

 TWTs Sought for Intersatellite Communication, March, p. 52. (WW) Innovative Design Improves Earth Station TWT, March, p. 89. (TA)

With • Tubes: DoD's Blessing. March, p. 94. (TF)

● Tubes: TWTs Grow, Gyrotrons Emerge, March, p. 96. (TF)

Tubes: Room for Improvement,

March, p. 98. (TF)
• Reliability Stressed for Space

Tubes, Aug., p. 49. (TA)

● Innovative TWT Collector Patented, Dec., p. 24. (MR)

 Communication TWTs Offer High Efficiency, Low AM/PM Conversion. See Components (May).

 WEMA Protests Government Repair of Microwave Tubes. See Gov./ Ind. (March).

The 1977 Annual Index can be found in the March 1978 issue, starting on p. 111.

2 to 6 GHz BAND PASS FILTER

The Filtronics Division of RYT Industries Model F10113 was designed to satisfy the need for a band pass filter covering the increasingly popular 2 to 6 GHz band. Due to the extremely wide bandwidth required (100 percent), the skirt selectivity is provided by a combination of high pass

and low pass filter structures Filtronics has a large number of high pass/low pass designs available from its line of elliptic function contiguous multiplexers which are adaptable to this type of application. Write or call if you need assistance in solving your multioctave filter problem.

MODEL F10113 SPECIFICATIONS

2.0-6.0 GHz Pass Band:

Insertion Loss: 1.0 dB Max. VSWR: 2.0 to 1 Max

Rejection: 50 dB Min. D.C.—1.5 GHz 35 dB Min. 7.5—18 GHz

